



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of: Dave Cargile et al.

Application No.: 10/662,878

Confirmation No.: 1149

Filed: September 16, 2003

For: CONTOUR FOR TUBE SEALS TO  
FACILITATE MOUNTING OF A  
PRODUCT EVACUATION  
DEVICE

Art Unit: 3754

Examiner: Joseph A. Kaufman

Atty. Docket No.: 29953-185176

Customer No. **26694**  
**PATENT TRADEMARK OFFICE**

**APPEAL BRIEF**

**Mail Stop Appeal Brief**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Va. 22313-1450

Dear Sir:

In response to the Final Office Action dated January 31, 2006, Appellants submit the present Appeal Brief.

This is an appeal to the Board of Patent Appeals and Interferences from the final Office Action of January 31, 2006. Please charge our deposit account no. 22-0261 for the \$500 Appeal Brief Fee and the \$120 extension of time fee.

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### **(1) REAL PARTY IN INTEREST**

The Assignee of this Application, and thus the real party of interest in this Appeal, is Graham Packaging Company, L.P., having a business address at 2401 Pleasant Valley Road, York, Pennsylvania, 17402.

### **(2) RELATED APPEAL AND INTERFERENCES**

No appeal or interference is known to Appellants, the Appellants' legal representative, or the Assignee which would directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

### **(3) STATUS OF CLAIMS**

The Application was filed on September 16, 2003 with claims 1-21.

Claim 10 was amended and claim 22 added by the Amendment filed April 6, 2005.

Claims 1 and 10 were amended by the Amendment filed July 28, 2005. A Request for Continued Examination was concurrently filed with the Amendment.

Claim 10 was amended by the Amendment filed on December 2, 2005.

Claims 1-22 were finally rejected under 35 U.S.C. § 112 and under 35 U.S.C. § 102(b) or §103(a) in the Final Office Action of January 31, 2006.

A Notice of Appeal was timely filed on June 30, 2006 with a Petition for a two month extension of time. Claims 1-22 are appealed as set forth in the Appendix to this brief.

#### **(4) STATUS OF AMENDMENTS**

No amendment has been filed since the issuance of the Final Office Action on January 31, 2006.

#### **(5) SUMMARY OF THE CLAIMED INVENTION**

The invention of claims 1-22 is a tube for containing a product to be squeezed from the tube when the tube is used in conjunction with a wrapping tool. As set forth in independent claim 1, tube (10) has a deformable main body (100) for storing a product, the main body also having a longitudinal direction and a transverse direction perpendicular to the longitudinal direction. Tube (10) further has opening (210) at a first end of the body (100) from which the product can be expelled, and seal (300) is located at a second end of the main body, opposite from the first end. Seal (300) has contour (310), and the seal (300) is formed solely by the main body 100. See, *e.g.* Figures 1 and 2, and Appellants' specification, paragraph 23, lines 5-8. Contour (310) has bearing surface (314) that is non-parallel to the longitudinal direction of the main body (100). Bearing surface (314) receives a wrapping force from a wrapping tool for wrapping the main body (100) around the seal (300). See Appellants' specification, paragraphs 23-24 and Figures 1 and 2.

Dependent claim 4, further recites that the bearing surface 314 is continuous along an entire length of seal 300 in the transverse direction of main body 100, and that contour 310 is a U-shaped trough. See Appellants' specification at paragraph 24 and in Figure 3. Claim 5 recites that bearing surface 334 is continuous along an entire length of seal 300 in the transverse direction of main body 100 and contour 310 comprises a first thickened portion 330 of the seal 300. The first thickened portion 330 protrudes in a first protrusion direction perpendicular to

both the longitudinal and transverse directions of main body 100. See Appellants' specification, paragraph 28 and Figure 7.

The invention according to independent claim 10 is directed to a tube (10) with a deformable main body (100) for containing a product, the main body also having a longitudinal direction and a transverse direction perpendicular to the longitudinal direction. Tube (10) further has opening (210) at a first end of the body (100) from which the product can be expelled, and seal (300) is located at a second end of the main body, opposite from the first end. Seal (300) has contour (310), and the seal (300) is formed solely by the main body 100. See, *e.g.* Figures 1 and 2, and Appellants' Specification, paragraph 23, lines 5-8. Contour (310) has bearing surface (314) that is non-parallel to the longitudinal direction of the main body (100). Bearing surface (314) receives a wrapping force from a wrapping tool for wrapping the main body (100) around the seal (300), and bearing surface (314) is discontinuous along the transverse direction of the main body (100). See, Appellants' Specification at paragraph 25 and Figures 4-6.

Claim 12, which depends from claim 10, further recites that the contour is a U-shaped trough (Figure 5). The invention of claim 13 is directed to tube 10 where the contour has a first thickened portion of seal 300 that protrudes in a first protrusion direction perpendicular to both the longitudinal and transverse directions of the main body. See Appellants' Specification, paragraph 28 lines 9-10 and Figure 9.

#### **(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection for review are as follows:

A. Whether claims 1-22 are properly rejected under 35 U.S.C. §112, first paragraph for failing to comply with the written description requirement.

B. Whether claims 1-8 and 18-21 are properly rejected as being anticipated under 35 U.S.C. § 102(b) or unpatentable under §103(a) over U.S. Patent No. 2,633,270 to Young (Young).

C. Whether claims 1, 10-17 and 22 are properly rejected as being anticipated under 35 U.S.C. § 102(b) or unpatentable under §103(a) over U.S. Patent No. 1,884,543 to Bolz (Bolz).

## **(7) ARGUMENT**

**A. Claims 1-22 are improperly rejected under 35 U.S.C. § 112, first paragraph for failure to comply with the written description requirement.**

The Office Action rejected claims 1-22 for failing to comply with the written description requirement. Specifically, the Examiner takes the position that the limitation of the seal being formed solely by the main body is not supported by the original disclosure.

Appellants respectfully disagree with the Examiner. It is apparent from the Figures that no additional materials or components other than the main body are used to create the seal. A person of skill in the relevant art would recognize after reviewing the disclosure that the seal as shown in Figure 1 can be formed by, for example crimping the main body, and/or forming the seal from the main body only by heat treatment. Figures 5 and 6, which show the seal enlarged, also demonstrate that no additional components other than the main body are used to create the seal. Further, the specification does not indicate the need or use for additional materials in creating the seal. The specification states, "[d]uring manufacturing of tube 10, seal 300 is formed to prevent material stored in tube 10 from exiting tube 10 . . . ." After reviewing Appellants' disclosure, it would be clear to one of skill in the relevant art that this seal can formed by crimping or heat sealing of the main body only.

The factual inquiry for determining compliance with the written description requirement is whether the specification conveys with reasonably clarity to those skilled in the art that applicant was in possession of the claimed invention at the time of filing. See, e.g., *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-4; 19 U.S.P.Q.2d 1111, 1117 (Fed. Cir. 1991). An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas. See *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 U.S.P.Q. 2d 1961, 1966 (Fed. Cir. 1997). In accordance with the case law, Appellants' specification and Figures convey to one of skill in the art that the seal as recited in Appellants' independent claims 1 and 10 and dependent claims 2-9 and 11-22 is formed solely by the main body.

Appellants believe that the Examiner's objection to the claim limitation is based on the specification not literally reciting the limitation of the seal being formed solely by the main body. However, this is not the test for satisfying the written description requirement. As stated by the CCPA, "[b]y disclosing in a patent application a device that inherently performs a function, operates according to a theory, or has an advantage, a patent applicant necessarily discloses that function, theory or advantage even though he says nothing concerning it. The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter." *In re Reynolds*, 443 F.2d 384, 170 USPQ 94, 98 (CCPA 1973). Appellants respectfully submit that the specification supports the limitation of the seal being formed solely from the main body. Reversal of the rejection is respectfully requested.

**B. Claims 1-8 and 18-21 are not anticipated under 35 U.S.C. § 102(b) or rendered obvious under 35 U.S.C. § 103(a) by Young**

1. Claim 1 is not anticipated by Young

The Examiner takes the position that the method of forming the seal solely by the main body is a product-by-process limitation. Appellants disagree. A product-by-process claim "is a product claim that defines the claimed product in terms of the process by which it is made" MPEP, § 2173.05(q). No process is recited in present claim 1; the seal is merely described, in part, as being formed by the main body. The requirement of claim 1 that the seal is formed solely by the main body is proper and must be given patentable weight.

Additionally, the Examiner admits that Young does not disclose the limitation of a seal formed solely of the main body (See January 31, 2006 Office Action, paragraph 4, final sentence). Seal 31 of Young is made of components other than the body of the tube, and thus cannot meet the limitation of claim 1. As Young does not anticipate at least this claim element, Young cannot anticipate claim 1. Reversal of the rejection is respectfully requested.

2. Claims 2-8 and 18-21 not anticipated by Young

Claims 2-8 and 18-21 depend from claim 1 and therefore are also not anticipated by Young.

3. Claim 4 is not anticipated by Young

Claim 4 includes the feature of the contour being a U-shaped trough. Young does not disclose this claimed feature and therefore claim 4 is not anticipated by Young.

4. Claim 5 is not anticipated by Young

Claim 5 includes the feature of the contour comprising a thickened portion of the seal. Young does not disclose this feature and therefore claim 5 is not anticipated by Young.

#### 5. Claim 1 is not rendered obvious by Young

The Examiner then takes the position that it would have been obvious to one of ordinary skill in the art to make the seal formed solely by the main body, based on the disclosure of Young. Appellants disagree. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). The Examiner specifically states that "it would have been obvious to one of ordinary skill in the art to make seal formed solely by the main body in order to form a more permanent bond and thus, lower the risk of detachment of the seal from the body." (Office Action of January 31, 2006, page 3, top paragraph).

Again, Appellants disagree. Seal 31 of Young is formed by a component placed over the main body to create an engaging surface that is required to engage the key. This is shown, for example, in Figure 1. The specification of Young also states "[w]ith keys of the prior art, I have noted that the winding is often not evenly accomplished because of lack of a suitable engaging surface between the winding key and the tube end. My invention is intended to overcome these difficulties" (Young, col. 2, lines 50-55). It is clear from this passage that an integral component of the Young invention is seal 31 formed by material other than that of the main body, as set forth in the specification and drawings. Accordingly, formation of the seal using the main body alone, as set forth in Appellants' claim 1 would not be obvious in light of Young.

#### 6. Claims 2-8 and 18-21 are not rendered obvious by Young

Claims 2-8 and 18-21 depend from claim 1 and therefore are also not rendered obvious by Young.



7. Claim 4 is not rendered obvious by Young

Claim 4 includes the feature of the contour being a U-shaped trough. Young does not suggest this claimed feature and therefore does not render claim 4 obvious.

8. Claim 5 is not rendered obvious by Young

Claim 5 includes the feature of the contour comprising a thickened portion of the seal. Young does not suggest this claimed feature. Accordingly, Young does not render claim 5 obvious.

9. The Examiner fails to establish a prima facie case for obviousness.

Appellants further assert that the Examiner has failed to establish a prima facie case of obviousness. The first requirement for establishing a prima facie case of obviousness is that there must be suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. (MPEP, § 2142.) "The test for an implicit showing [of obviousness] is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

There is no explicit or implicit disclosure in Young that would motivate one of skill in the art to modify Young by removing seal 31 and replacing it with a seal formed "solely by the main body" (see, *e.g.*, Appellants' claims 1 and 10). Thus, the first requirement for satisfying the prima facie case for obviousness is lacking, and the rejection of Appellants' claims 1-8 and 11-21 must be reversed.

10. Young teaches away from Appellants' claimed invention

It is well established that teaching away is evidence of non-obviousness. A prima facie case of obviousness can be rebutted if the applicant can show that prior art teaches away

from claimed invention. See *In re Haruna*, 249 F.3d 1327, 58 U.S.P.Q. 2d 1517 (2001); *In re Geisler*, 116 F.3d 1465, 1469, 43 U.S.P.Q. 2d 1362, 1365 (1997). As discussed above, the disclosure of Young communicates the necessity of the engaging surface of seal 31, which is formed by placing an additional component over the tube. Thus, there is no suggestion or motivation to modify seal 31 of Young to be formed solely by the main body. In fact, the disclosure of Young teaches away from doing so, and this disclosure must be considered. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

When considering the disclosure of Young, particularly at col. 2, lines 50-55 (" . . . prior art . . . lack of suitable engaging surface between the winding key and the tube end), it is clear that the disclosure teaches away from Appellants' claimed limitation of "a seal . . . formed solely by the main body" (See, *e.g.*, Appellants' claims 1 and 10). Thus, even if the Examiner had established a prima facie case of obviousness, Appellant has presented sufficient evidence to rebut the prima facie case. Accordingly, the rejection must be reversed.

11. Modifying the seal of Young as suggested by the Examiner would destroy the Young reference

The invention of Young is accomplished by improving the engaging surface between the key and the tube through the use of seal 31. Thus the portion of seal 31 formed by the additional component is a critical feature of Young and cannot be removed. The Federal Circuit has held if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

In sum, there is no motivation to modify Young to arrive at Appellants' claimed seal formed solely by the main body and the rejection must be reversed.

12. The Examiner uses Appellants' disclosure for the motivation the modify the Young reference

As stated by the Federal Circuit, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). As demonstrated by the arguments set forth above, there is no evidence that a person of ordinary skill in the art would have been motivated to modify the Young reference to have a seal formed solely by the main body. Thus, any alleged motivation to modify the reference is based only on Appellants' disclosure. The use of Appellants' disclosure as the motivation to modify amounts to impermissible hindsight bias. "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." *Para Ordnance Manufacturing, Inc. v. SGS Importers International Inc.*, 73 F. 3d 1085, 37 USPQ2d 1237 (Fed. Cir. 1995). Accordingly, the rejection of claims 1-8 and 18-21 as obvious over Young must be reversed.

**C. Claims 1, 10-17 and 22 are not anticipated by Bolz under 35 U.S.C. § 102(b) or rendered obvious under 35 U.S.C. § 103(a) by Bolz.**

1. Claims 1 and 10 are not anticipated by Bolz.

The Examiner again states that Appellants' claim limitation of forming the seal solely by the main body is a product by process limitation and is not given criticality. This analysis is incorrect and the limitation must be considered (see discussion *infra*, §B.1.). As admitted by the Examiner (January 31, 2006 Office Action, paragraph 5, final sentence), Bolz does not disclose

Appellants' claim limitation of a seal formed solely by the main body. Accordingly, Appellants' independent claims 1 and 10 are not anticipated by Bolz. Reversal of the rejection is respectfully requested.

2. Claims 11-17 and 22 are not anticipated by Bolz

Claims 11-17 and 22 depend from claim 10 and therefore are also not anticipated by Bolz.

3. Claim 12 is not anticipated by Bolz

Claim 12 includes the feature of the contour being a U-shaped trough. Bolz does not disclose this claimed feature and therefore does not anticipate claim 12.

4. Claim 13 is not anticipated by Bolz

Claim 13 includes the feature of the contour comprising a thickened portion of the seal. Bolz does not disclose this feature and therefore claim 13 is not anticipated by Bolz.

5. Claims 1 and 10 are not rendered obvious by Bolz

The Examiner states that "it would have been obvious to one of skill in the art to make the seal formed solely by the main body in order to form a more permanent bond and thus, lower the risk of detachment of the seal from the body" (Final Office Action, paragraph 5). Appellants' disagree. The specification of Bolz explains that the folded end 14 is sealed by metal strip 13, the strip having lateral ear extensions 15. The ear extensions have aligning apertures 16 designed to be engaged by an arched finger 18 on the key 20. Thus the metal strip 13 is necessary in order for the invention of Bolz to work. Accordingly, there would be no motivation for one of ordinary skill in the art to remove the strip 13 of Bolz and instead form a seal solely from the main body, as recited in Appellants' claims 1 and 10. As a result, claims 1 and 10 are not obvious in view of Bolz. Reversal of the rejection is respectfully requested.

6. Claims 11-17 and 22 are not rendered obvious by Bolz

Claims 11-17 and 22 depend from claim 10 and therefore are also not rendered obvious by Bolz.

7. Claim 12 is not rendered obvious by Bolz

Claim 12 includes the feature of the contour being a U-shaped trough. Bolz does not suggest this claimed feature and therefore Bolz does not render claim 12 obvious.

8. Claim 13 is not rendered obvious by Bolz

Claim 13 includes the feature of the contour comprising a thickened portion of the seal. Bolz does not suggest this claimed feature. Accordingly, Bolz does not render claim 13 obvious.

9. Examiner fails to establish prima facie case of obviousness

In order to establish a prima facie case of obviousness, there must first be a suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. (MPEP, § 2142.) As stated in the preceding section, strip 13 of Bolz is required in order for the device to work, as the strip includes ear extensions 15 to engage key 20. Accordingly, there is no motivation to modify Bolz in the manner suggested by the Examiner to arrive at Appellants' claimed limitation of a seal formed solely by the main body. The Examiner fails to establish a prima facie case of obviousness and the rejection must be reversed.

10. Bolz teaches away from Appellants' claimed invention

It is clear from the disclosure of Bolz that strip 13 with ear extensions 15 is critical to the functionality of the invention. Strip 13 is not formed solely by the main body as required by Appellants' claims. Due to the importance of these features, Bolz teaches away from the use of a seal "formed solely by the main body" (See, e.g., Appellants' independent claims 1 and 10). At

the very least, it would not be obvious to make strip 13 with ear extensions 15 solely from the main body. As discussed above in section B.4, teaching away is evidence of non-obviousness. Thus, even if the Examiner had satisfied a prima case of obviousness, the prima facie case is rebutted. The rejection must be reversed.

11. Modifying the strip of Bolz as suggested by the Examiner would destroy the Bolz reference.

As described in the specification and shown in the Figures of Bolz, strip 13 is required for engagement of key 20 and use of the invention. The removal of strip 13 would result in inoperability of the Bolz device. Accordingly, there is no motivation to make the modification and the obviousness rejection falls.

12. The Examiner uses Appellants' disclosure for the motivation the modify the Bolz reference.

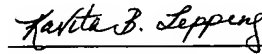
It has been established in the preceding sections that there is no motivation within the Bolz reference itself or within the knowledge of one of skill in the art to modify Bolz to arrive at Appellants' claimed invention. Rather, the Examiner uses Appellants' own disclosure as a source of the motivation. This use of Appellants' disclosure constitutes hindsight bias, which cannot be used to establish obviousness. (See discussion, *infra*, § B.6.) The rejection must be reversed.

**(8) CONCLUSION**

For the foregoing reasons, it is respectfully submitted that claims 1-22 are patentable over the applied references. Accordingly, the Examiner's rejection of these claims should be reversed.

Respectfully submitted,

October 2, 2006



Stuart I. Smith  
Registration No. 42,159  
Kavita B. Lepping  
Registration No. 54,262  
VENABLE LLP  
P.O. Box 34385  
Washington, D.C. 20043-9998  
Telephone: (202) 344-4000  
Telefax: (202) 344-8300

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**(9) CLAIM APPENDIX**

Claim 1 (Previously Presented): A tube for containing a product to be squeezed from the tube when the tube is used in conjunction with a wrapping tool, the tube comprising:

a deformable main body for storing the product prior to the product being squeezed from the tube, the main body having a longitudinal direction, a transverse direction perpendicular to the longitudinal direction, a first end and a second end opposite the first end in the longitudinal direction of the main body;

an opening at the first end of the main body, the opening being an outlet for the product when the product is squeezed from the tube; and

a seal at the second end of the main body and formed solely by the main body, the seal having a contour, the contour having a bearing surface that is non-parallel to the longitudinal direction of the main body,

wherein the bearing surface is for receiving a wrapping force from the wrapping tool for wrapping the main body around the seal.

Claim 2 (Original): The tube of claim 1, wherein the bearing surface is perpendicular to the longitudinal direction of the main body.

Claim 3 (Original): The tube of claim 1, wherein the bearing surface is continuous along an entire length of the seal in the transverse direction of the main body.

Claim 4 (Original): The tube of claim 3, wherein the contour is a U-shaped trough along the transverse direction of the main body.



Claim 5 (Original): The tube of claim 3, wherein the contour comprises a first thickened portion of the seal, the first thickened portion protruding in a first protrusion direction perpendicular to both the longitudinal and transverse directions of the main body.

Claim 6 (Original): The tube of claim 5, wherein the bearing surface is planar and the plane of the bearing surface is perpendicular to the longitudinal direction of the main body.

Claim 7 (Original): The tube of claim 5, wherein the contour further comprises a second thickened portion of the seal, the second thickened portion protruding in a second protrusion direction opposite to the first protrusion direction and being located on an opposite side of the seal from the first thickened portion.

Claim 8 (Original): The tube of claim 7, wherein the bearing surface comprises a first bearing surface on the first thickened portion and a second bearing surface on the second thickened portion, the first and second bearing surfaces being planar and the planes of the bearing surfaces being perpendicular to the longitudinal direction of the main body.

Claim 9 (Original): The tube of claim 7, wherein the contour is cross-shaped such that the first thickened portion protrudes in the first protrusion direction a greater distance than the first thickened portion is thick in the longitudinal direction of the main body, and  
the second thickened portion protrudes in the second protrusion direction a greater distance than the second thickened portion is thick in the longitudinal direction of the main body.

Claim 10 (Currently Amended): A tube for containing a product to be squeezed from the tube when the tube is used in conjunction with a wrapping tool, the tube comprising:

a deformable main body for storing the product prior to the product being squeezed from the tube, the main body having a longitudinal direction, a transverse direction perpendicular to the longitudinal direction, a first end and a second end opposite the first end in the longitudinal direction of the main body;

an opening at the first end of the main body ~~and formed solely by the main body~~, the opening being an outlet for the product when the product is squeezed from the tube; and

a seal at the second end of the main body and formed solely by the main body, the seal having a contour, the contour having a bearing surface that is non-parallel to the longitudinal direction of the main body,

wherein the bearing surface is for receiving a wrapping force from the wrapping tool for wrapping the main body around the seal, and the bearing surface is discontinuous along the transverse direction of the main body.

Claim 11 (Original): The tube of claim 10, wherein the bearing surface is perpendicular to the longitudinal direction of the main body.

Claim 12 (Original): The tube of claim 10, wherein the contour is a U-shaped trough along the transverse direction of the main body.

Claim 13 (Original): The tube of claim 10, wherein the contour comprises a first thickened portion of the seal, the first thickened portion protruding in a first protrusion direction perpendicular to both the longitudinal and transverse directions of the main body.

Claim 14 (Original): The tube of claim 13, wherein the bearing surface is planar and the plane of the bearing surface is perpendicular to the longitudinal direction of the main body.

Claim 15 (Original): The tube of claim 13, wherein the contour further comprises a second thickened portion of the seal, the second thickened portion protruding in a second protrusion direction opposite to the first protrusion direction and being located on an opposite side of the seal from the first thickened portion.

Claim 16 (Original): The tube of claim 15, wherein the bearing surface comprises a first bearing surface on the first thickened portion and a second bearing surface on the second thickened portion, the first and second bearing surfaces being planar and the planes of the bearing surfaces being perpendicular to the longitudinal direction of the main body.

Claim 17 (Original): The tube of claim 15, wherein the contour is cross-shaped such that the first thickened portion protrudes in the first protrusion direction a greater distance than the first thickened portion is thick in the longitudinal direction of the main body, and

the second thickened portion protrudes in the second protrusion direction a greater distance than the second thickened portion is thick in the longitudinal direction of the main body.

Claim 18 (Original): A tube evacuation system comprising:

the tube of claim 1; and

the wrapping tool, the wrapping tool comprising

a tube contour receiver for receiving the contour of the tube.

Claim 19 (Original): The system of claim 18, wherein the tube contour receiver comprises a slot that receives the contour of the tube.

Claim 20 (Original): The system of claim 19, wherein the slot has an open end such that the contour of the tube is removable from the slot.

Claim 21 (Original): The system of claim 20, wherein a portion of the slot contacts the bearing surface of the contour of the tube.

Claim 22 (Previously Presented): A tube evacuation system comprising:

the tube of claim 10; and

the wrapping tool, the wrapping tool comprising

a tube contour receiver for receiving the contour of the tube.

## **IX. Evidence Appendix**

None.

## **X. Related Proceedings Appendix**

None